

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A supporting structure for supporting mother substrates having a length, a width and a thickness, comprising:

a frame having a length, a width and a height, the length being substantially greater than the width, wherein the length and width of the frame corresponds to the length of width of inserted mother substrate, respectively;

a first plurality of first support members protruding from a first side of the frame and a second plurality of second support members protruding from a second opposing-side of the frame opposing to the first side;

first rectangular supporting bars connected to two support members of the first plurality of support members and second rectangular supporting bars connected to two support members of the second plurality of support member, wherein the first and second supporting bars are disposed at a distance of about 170mm from the frame; and

a robot arm for loading the mother substrates onto first and second the support members and the first and second rectangular supporting bars,

wherein the first and second supporting bars contact and support a lower surface of inserted mother substrate along first and second parallel sides of the inserted mother substrates at opposing parallel regions of the lower surface,

wherein the length of the first supporting bars are longer than the distance between the two first support members so that the first supporting bars cross the two first support members and extend to the outer portion of the region between the first supporting members and the length of the second supporting bars are longer than the distance between the two second support members so that the second supporting are crossed the two second support members and extend to the outer portion of the region between the second support members, thereby the first supporting bars are slightly spaced from each other and the second supporting bars are slightly spaced from each other, so that the first and second supporting bars are in contacted with substantially the whole width of the first and second parallel side of the inserted mother substrate to uniformly distribute a load to the patterned spacers in substantially the whole width of the first and second parallel sides of the inserted mother substrate,

~~wherein the mother substrate includes a first mother substrate having a plurality of panel regions having a plurality of thin film transistor, a second mother substrate having a plurality of panel regions having a color filter, a liquid crystal layer between the first mother substrate and second mother substrate, and a sealant along the outer edge of each panel region between the first and second mother substrates to bond the first and second mother substrates,~~

wherein the robot arm transfers the mother substrates into the frame at a height a little higher than the supporting bars and descends into a space at a center portion of the frame so that the mother substrates are contacted with the support members and the first and second rectangular supporting bars.

2. (Previously Presented) The structure according to claim 1, wherein the supporting bars include acetal resin material.

3. (Previously Presented) The structure according to claim 1, wherein the supporting bars contact the substrate via surface contact.

4-6. (Cancelled)

7. (Currently Amended) The structure according to claim 1, wherein the first and second pluralities of support members include a first set of support members disposed to extend along a first plane within the frame and a second set of support members disposed to extend along a second plane different from the first plane within the frame.

8. (Previously Presented) The structure according to claim 7, wherein each of the first and second sets of support members includes a first pair of support members extending from one of the opposing sides of the frame and a second pair of support members extending from another one of the opposing sides of the frame.

9. (Previously Presented) The structure according to claim 1, wherein the substrates are transferred onto the supporting bars by a robot arm.

10. (Previously Presented) The structure according to claim 8, wherein the supporting bars extend along the first parallel sides of the substrates.

11. (Previously Presented) The structure according to claim 10, wherein the supporting bars extend past edge portions of the substrates along the first parallel sides of the substrates.

12. (Previously Presented) The structure according to claim 8, wherein a total number of supporting bars is dependent upon a size of the frame.

13. (Previously Presented) The structure according to claim 12, wherein the supporting bars prevent deformation of the liquid crystal display panels.

14-25. (Cancelled)

26. (Withdrawn) A method of supporting mother substrates, comprising:
providing a frame having a length, a width and a height, the length being substantially greater than the width;
providing a first plurality of support members protruding from a first side of the frame and a second plurality of support members protruding from a second opposing side of the frame;
providing first rectangular supporting bars connected to the first plurality of support members and second rectangular supporting bars connected to the second plurality of support members, wherein the supporting bars are disposed at a distance of about 170mm from the frame; and

inserting mother substrate into the frame, the mother substrates including a plurality of panel regions of a liquid crystal display device having a plurality of patterned spacers between the mother substrates, the mother substrates having a length, a width and a thickness, wherein the mother substrates are inserted such that the length and width of the frame corresponds to the length of width of the inserted mother substrates,

wherein the first and second supporting bars contact a lower surface of the inserted mother substrates along first and second parallel sides of the inserted mother substrates at

opposing parallel regions of the lower surface, wherein the first supporting bars are slightly spaced from each other and the second supporting bars are slightly spaced from each other, so that the first and second supporting bars are in contacted with substantially the whole width of the of the first and second parallel sides of the inserted mother substrates to uniformly distribute a load to the patterned spacers in substantially the whole width of the first and second parallel sides of the inserted mother substrates.